

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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ARKEMA INC. AND ARKEMA FRANCE  
Petitioner,

v.

HONEYWELL INTERNATIONAL INC.,  
Patent Owner.

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PGR2016-00011  
Patent No. 9,157,017

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**PATENT OWNER'S EIGHTH AMENDED APPENDIX OF EXHIBITS**

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Exhibit No.	Description
Exhibit 2001	Declaration of Donald Bivens
Exhibit 2002	Curriculum Vitae of Donald Bivens
Exhibit 2003	U.S. Patent No. 5,182,040 to Bartlett et al.
Exhibit 2004	U.S. Patent No. 5,516,446 to Bivens and Yokozeki
Exhibit 2005	U.S. Patent No. 5,648,017 to Bartlett et al.
Exhibit 2006	U.S. Patent No. 5,725,791 to Bivens et al.
Exhibit 2007	U.S. Patent No. 5,968,406 to Bartlett et al.
Exhibit 2008	U.S. Patent No. 7,914,968 to Minor et al.
Exhibit 2009	U.S. Patent No. 7,959,825 to Minor et al.
Exhibit 2010	Wilson, C. L. et al., Abstract: <i>Man's Impact on the Global Environment: Assessment and Recommendation for Action. Report of the Study of Critical Environmental Problems (SCEP)</i> , MIT Press, Cambridge, Mass. (1970), available at: <a href="http://hdl.handle.net/1969.3/26655">http://hdl.handle.net/1969.3/26655</a>
Exhibit 2011	A. Hammond, Book Review of W. Matthews et al., <i>Study of Man's Impact on Climate (SMIC) Report, Inadvertent Climate Modification</i> , MIT Press, Cambridge, Mass. (1971), SCIENCE Vol. 176, available at: <a href="http://science.sciencemag.org/content/176/4030/38.2">http://science.sciencemag.org/content/176/4030/38.2</a>
Exhibit 2012	V. Ramanathan, <i>Greenhouse Effect Due to Chlorofluorocarbons: Climate Implications</i> , SCIENCE: American Association for the Advancement of Science, Vol. 190 (1975), available at: <a href="http://science.sciencemag.org">http://science.sciencemag.org</a>
Exhibit 2013	J. Calm and D. Didion., <i>Trade-Offs in Refrigerant Selections: Past, Present, and Future</i> , ASHRAE/NIST Refrigerants Conference (October 1997)
Exhibit 2014	B. Newell and T. Newell, <i>In Situ, Real Time Oil Concentration in a Mobile Air Conditioning System</i> , NI Tech Bulletin 001, Newell Instruments, Inc.
Exhibit 2015	ACURA Service Bulletin, <i>R-134a Refrigerant A/C System</i> , Sept. 29, 1992 for model NSX Legend, year 1993
Exhibit 2016	2013 ASHRAE Handbook Fundamentals, SI Ed., Chapter 29: Refrigerants, Table 3
Exhibit 2017	Dometic, Material Safety Data Sheet, March 25, 2015
Exhibit 2018	ICI Americas, Inc., PAG-46, Material Safety Data Sheet (Feb. 9, 1999)

Exhibit 2019	Presentation, <i>Exposure Limits: TLVs, BEIs, PELs, RELs, WEELs, ERPGs and OELs</i> , available online at: <a href="http://isites.harvard.edu/fs/docs/icb.topic156420.files/Exposure_Limits">http://isites.harvard.edu/fs/docs/icb.topic156420.files/Exposure_Limits</a>
Exhibit 2020	U.S. Patent No. 6,516,837 to Thomas et al.
Exhibit 2021	Pate, Michael, et al., <i>Miscibility Of Lubricants With Refrigerants, Final Report</i> , Iowa State University of Science and Technology Department of Mechanical Engineering (July 1993)
Exhibit 2022	Crown, S.W., et al., <i>A Comparison Study of the Thermal Performance of R12 and R134a</i> , International Refrigeration and Air Conditioning Conference (1992)
Exhibit 2023	Uemura, S., et al., <i>Characteristics of HFC Refrigerants</i> , International Refrigeration and Air Conditioning Conference (1992)
Exhibit 2024	Brown, J. Steven, et al., <i>The fluorinated olefin R-1234ze(Z) as a high-temperature heat pumping refrigerant</i> , International Journal of Refrigeration 32, 1412-1422 (2009)
Exhibit 2025	Case Law of the Board of Appeal of the European Patent Office (Seventh Edition, Sept. 2013)
Exhibit 2026	Bristol Compressors, Medium and Low Temperature Retrofit from R502 to R404A/R507, Application Bulletin 125 (Release date Oct. 20, 1995)
Exhibit 2027	Wilson, C. L. et al., <i>Man's Impact on the Global Environment: Assessment and Recommendation for Action. Report of the Study of Critical Environmental Problems (SCEP)</i> , MIT Press, Cambridge, Mass. (1970)
Exhibit 2028	Matthews, W., et al., <i>Study of Man's Impact on Climate (SMIC) Report, Inadvertent Climate Modification</i> , MIT Press, Cambridge, Mass. (1971)
Exhibit 2029	Case Law of the Board of Appeal of the European Patent Office (Seventh Edition, Sept. 2013)
Exhibit 2030	ASHRAE Standard, Designation and Safety Classification of Refrigerants, American Society of Heating, Refrigerating and Air-Conditioning, Inc.(Nov. 18, 2009)
Exhibit 2031	United States Environmental Protection Agency's Office of Pesticide Programs, Summary of the IBT Review Program (July 1983)
Exhibit 2032	Manual for Investigation of HPV Chemicals, Chapter 3: Data Evaluation

Exhibit 2033	TSCA Filing, Refrigerant 1243zf; TNO Quality of Life Report: <i>A sub-acute (28-day) inhalation toxicity study with 3,3,3-trifluoroprop-1-ene (HFO 1234zf) in rats</i> (Dec. 3, 2010)
Exhibit 2034	Clayton Jr., J. Wesley, Chapter 9: The Mammalian Toxicology of Organic Compounds Containing Fluorine (1996)
Exhibit 2035	U.S. Patent No. 5,569,797 to Fu et al.
Exhibit 2036	U.S. Patent No. 5,001,287 to Fernandez et al.
Exhibit 2037	ECETOC Technical Report No. 103: Toxicity of Possible Impurities and By-products in Fluorocarbon Products (December 2008)
Exhibit 2038	U.S. Patent Application No. 13/939,233
Exhibit 2039	Transcript of Mar. 29, 2016 telephone proceedings before the Board
Exhibit 2040	Transcript of Nov. 28, 2016 teleconference with the Board
Exhibit 2041	Transcript of Nov. 29, 2016 teleconference with the Board
Exhibit 2042	US Patent Publication No. 2012/0292556 A1
Exhibit 2043	Brown, J. Steven, <i>HFOs: New, Low Global Warming Potential Refrigerants</i> , ASHRAE Journal (August 2009)
Exhibit 2044	Brown, J. Steven, <i>Low Global Warming Potential Refrigerant Options for Unitary Equipment</i> , ASHRAE Winter Conference (2011)
Exhibit 2045	Beattie, Roger J., et al., <i>Investigation of Low GWP Refrigerant Interaction with Various Lubricant Candidates</i> , Purdue University (2012), available at <a href="http://docs.lib.purdue.edu/iracc/1223">http://docs.lib.purdue.edu/iracc/1223</a>
Exhibit 2046	Domanski, Piotr A., et al., NIST, <i>Transition to Low-GWP Refrigerants: Options and Tradeoffs</i> , Florida International University (April 1, 2016)
Exhibit 2047	McLinden, Mark O., NIST, <i>Thermodynamic Analysis for Low-GWP Refrigerants</i> , ASHRAE Winter Conference (Jan. 19, 2014)
Exhibit 2048	Deposition Transcript of Dr. William J. Brock (Dec. 1, 2016)
Exhibit 2049	Deposition Transcript of Dr. J. Steven Brown (Dec. 8, 2016)
Exhibit 2050	Brown, J. Steven et al., <i>Comparative analysis of an automotive air conditioning systems operating with CO2 and R134a</i> , International Journal of Refrigeration (2002)
Exhibit 2051	Brown, Steven J., <i>Potential R-114 Replacement Refrigerants</i> , ASHRAE Transactions, Vol. 114 (2008)
Exhibit 2052	Brown, J. Steven, et al., <i>Thermodynamic properties of eight fluorinated olefins</i> , International Journal of Refrigeration, (2010)

Exhibit 2053	Clodic, Denis, <i>Automobile Air-conditioning: Environmental Stakes and Future Technical Options</i> , Journal of Cold and Air-conditioning (May 2008)
Exhibit 2054	Clodic, Denis, et al., <i>Characteristics and Performances of New Refrigerants</i> , ADEME Technical Day (Sept. 23, 1999)
Exhibit 2055	Ember, Lois R., et al., <i>Tending the Global Commons</i> , C&EN (Nov. 24, 1986)
Exhibit 2056	EPA Approves New Coolant for Car AC Systems/Better climate protection without harming the ozone layer, available at <a href="https://yosemite.epa.gov">https://yosemite.epa.gov</a> (Feb. 28, 2011)
Exhibit 2057	Fisher, Donald A., et al., <i>Model calculations of the relative effects of CFCs and their replacements on global warming</i> , Nature, Vol. 433 (April 5, 1990)
Exhibit 2058	Takizawa, Kenji, et al., <i>Flammability assessment of CH<sub>2</sub>=CFCF<sub>3</sub>: Comparison with fluoroalkenes and fluoroalkanes</i> , Journal of Hazardous Materials (2009)
Exhibit 2059	Kondo, Shigeo, et al., <i>Flammability limits of olefinic and saturated fluoro-compounds</i> , Journal of Hazardous Materials (2009)
Exhibit 2060	Howe-Grant, Mary (Editor), <i>Fluorine Chemistry: A Comprehensive Treatment</i> (1995)
Exhibit 2061	French Patent, No. 0 495 543 A1 (1992)
Exhibit 2061A	French Patent, No. 0 495 543 A1 (1992) with certified translation
Exhibit 2062	Gad, Shayne C., et al., <i>Inhalation Toxicity of Hexafluoroisobutylene</i> , Toxicology and Applied Pharmacology (March 31, 1986)
Exhibit 2063	<i>GM First to Market Greenhouse Gas-Friendly Air Conditioning Refrigerant in U.S.</i> , available at: <a href="http://www.gm.com">http://www.gm.com</a> (July 23, 2010)
Exhibit 2064	<i>Refrigerant Selection and System Design – the role of HFCs</i> , Institute of Refrigeration, Guidance Note 18 (April 18, 2009)
Exhibit 2065	US Patent Publication No. 2011/0312101 A1
Exhibit 2066	William L. Kopko, <i>Beyond CFCs - Extending the Search for New Refrigerant</i> , Proceedings of ASHRAE's 1989 CFC Technology Conference (1989)
Exhibit 2066A	William L. Kopko, <i>Beyond CFCs - Extending the Search for New Refrigerant</i> , Proceedings of ASHRAE's 1989 CFC Technology Conference (1989)

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